

**REMARKS**

Claims 1-15 and 21-23 are pending in the present Application. Claims 1, 6, and 7 have been amended, leaving Claims 1-15 and 21-23 for consideration upon entry of the present Amendment.

Support for the amendment to Claims 1, 6, and 7 can at least be found in the specification, for example, at page 20, lines 28.

No new matter has been introduced by these amendments. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

**Claim Rejections Under 35 U.S.C. § 103(a)**

Claims 1-15 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Applicant's admitted prior art Figures 1A-1B and corresponding discussion in the specification in view of Fujitsu (Japanese Patent Application No. 07-20247). Applicant respectfully traverses this rejection.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

The Applicant's Admitted Prior Art (AAPA) discloses etching of a gate electrode formed above the gate insulating film using mixture gas of SF<sub>6</sub> gas and O<sub>2</sub>. The AAPA also discloses that, when the gate electrode is etched using the mixture gas, because the selection ratio of the gate insulating film and the gate electrode is low, although the tape shape can be achieved, the gate insulating film is also etched. However, the AAPA fails to disclose a

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combination of this etching step using mixture gas of SF<sub>6</sub> and O<sub>2</sub> and another etching step, as claimed by Applicant.

Rather, in making the rejection, the Examiner stated that it would have been obvious to someone with ordinary skill in the art to modify the process taught by Applicant's admitted prior art to include the claimed second etching process, which uses a gas containing mixture of chlorine and oxygen as suggested by Fujitsu, in order to prevent generation of etching residue on the sidewalls of a floating gate electrode and eliminate shorting of the electrode. (O.A., page 3). Applicant respectfully disagrees with the Examiner that AAPA, alone or in combination with Fujitsu, teach or suggest each and an every element of Applicant's claimed invention.

More particularly, it is noted that Fujitsu discloses that a floating gate electrode is etched using "gas containing mixture of chlorine and oxygen" to achieve a taper-shaped side wall of the floating gate electrode. However, the gate electrode in Fujitsu is made of "polysilicon" and the behavior of etching fundamentally differs from that of an etching step of a gate electrode made of a refractory metal material.

Further, Fujitsu only discloses the use of polysilicon as the gate electrode material and fails to disclose or even suggest the use of a refractory metal as another material of the gate electrode. In other words, Fujitsu fails to recognize the problem when a refractory metal material is used in the gate electrode that a non-volatile etching residue is generated. In addition, Fujitsu also fails to disclose or even suggest a possibility for combining an etching step using the gas containing the mixture of chlorine and oxygen and another etching step.

Therefore, a person with ordinary skill in the art would conclude, based on the disclosure of Fujitsu, that there is no problem as long as the gate electrode is etched using gas containing a mixture of chlorine and oxygen. Fujitsu would not motivate a person with ordinary skill in the art to employ an etching step using a combination other than chlorine and oxygen.

For at least these reasons, AAPA, alone or in combination with Fujitsu fail to teach or suggest each and every element of at least Applicant's independent Claims 1, 6, and 7. Accordingly, these claims are not obvious and are allowable over AAPA and Fujitsu. Moreover, as dependent claims from an allowable independent claim, Claims 2-5, and 8-15

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and 21-23 are, by definition, also allowable.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicant. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

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